

WHAT IS CLAIMED IS:

1. A video display apparatus, comprising:

a deflection circuit output stage for selectively generating a deflection current in a deflection winding at a first deflection frequency and at a second deflection frequency;

5 a power supply for producing via a common power transistor of an output stage a first supply voltage at a first terminal and a second supply voltage at a second terminal;

a first switch responsive to a control signal that is indicative of the selected deflection frequency for selectively coupling to said deflection circuit output stage, said first supply voltage, when said first deflection frequency is selected, and said second supply voltage, when
10 said second deflection frequency is selected; and

a power supply regulator responsive to at least one of said first and second supply voltages for regulating said at least one of said first and second supply voltages via a negative feedback path.

2. A video display apparatus according to Claim 1, further comprising a second switch
15 responsive to a control signal that is indicative of the selected frequency and coupled in said negative feedback path, said second switch having a first state, when said deflection current is at said first deflection frequency and having a second state, when said deflection current is at said second deflection frequency for providing coarse adjustment.

3. A video display apparatus according to Claim 2, further comprising a source of a
20 fine adjustment signal coupled to said negative feedback path for providing fine adjustment.

4. A video display apparatus according to Claim 3, wherein a portion of said negative feedback path contains information derived from at least one of said first and second supply voltages, information derived from the state of said second switch and information derived from said fine adjustment signal.

25 5. A video display apparatus according to Claim 2, wherein each of said first and second supply voltages is regulated via said negative feedback path.

6. A video display apparatus according to Claim 1, further comprising an output transformer coupled to said power transistor for producing said first supply voltage from a voltage developed in a first transformer winding and said second supply voltage from a
30 voltage developed in a second transformer winding of said transformer and having a third transformer winding for producing a third supply voltage that is coupled to a load circuit, wherein a volts-per-turn ratio in said third transformer winding remains the same at each of

said first and second deflection frequencies.

7. A video display apparatus according to Claim 1, further comprising an output transformer coupled to said power transistor for producing said first and second supply voltages and having a transformer winding for producing a third supply voltage that is coupled to a load circuit, wherein a volts-per-turn ratio in said transformer winding remains the same at each of said first and second deflection frequencies.

8. A video display apparatus according to Claim 1 wherein said power supply regulator is responsive to a feedback signal produced at an output terminal of said first switch for regulating each of said first and second supply voltages.

9. A video display apparatus, comprising:
a deflection circuit output stage for selectively generating a deflection current in a deflection winding at a first deflection frequency and at a second deflection frequency;
a power supply having a power transformer for producing a first supply voltage to energize said deflection circuit output stage, selectively, when said first deflection frequency is selected, and for producing a second supply voltage to energize said deflection circuit output stage, selectively, when said second deflection frequency is selected, said power transformer including a transformer winding for producing a third supply voltage that is coupled to a load circuit; and

a power supply regulator responsive to at least one of said first and second supply voltages for regulating at least one of said first and second supply voltages via a negative feedback path such that a volts-per-turn ratio in said transformer winding remains the same at each of said first and second deflection frequencies.

10. A video display apparatus according to Claim 9 wherein said power supply regulator is responsive to said first supply voltage when said first deflection frequency is selected and to said second supply voltage when said second deflection frequency is selected.

11. A deflection arrangement, comprising:
a power supply for producing a first deflection voltage when said deflection arrangement operates at a first deflection frequency and for producing a second deflection voltage when said deflection arrangement operates at a second deflection frequency, different from said first deflection frequency, said power supply also including feedback by way of a feedback path, which feedback tends to control that one of said first and second deflection voltages being generated;

feedback control means coupled to said feedback path, for controlling said feedback to be in a first proportion when said first deflection frequency is selected and in a second proportion, different from said first proportion, when said second deflection frequency is selected, for tending to maintain a set voltage value; and

5 voltage correction means coupled to said feedback path, for adding a first voltage correction signal to said feedback when said first deflection frequency is selected, and for adding to said feedback a second voltage correction signal, different from said first voltage correction signal, when said second deflection frequency is selected, for correcting the value of said set voltage.

10 12. A deflection arrangement according to claim 11, wherein said second deflection voltage is greater than said first deflection voltage, and said second deflection frequency is greater than said first deflection frequency.

13. A deflection arrangement according to claim 11, wherein said feedback path includes a voltage divider for reducing the magnitude of said feedback relative to that one of
15 said first and second deflection voltages being generated, and wherein:

said feedback control means comprises a switched impedance coupled to said voltage divider for causing said first proportion to be changed to said second proportion when said second deflection frequency is selected.

14. A deflection arrangement according to claim 11, wherein said voltage correction
20 means comprises a current source for coupling a first current to said feedback path when said first deflection frequency is selected and for coupling a second current, different from said first current, to said feedback path when said second deflection frequency is selected.

15. A power supply, comprising:

a controllable source of varying voltage including a feedback input port;

25 a transformer including first, second, and third secondary windings, and also including a primary winding coupled to said controllable source, for generating pulsatory voltages in said first, second, and third secondary windings;

rectifying and filtering means coupled to said first secondary winding, for generating a first energizing voltage;

30 second and third rectifying means coupled to said second and third secondary windings, respectively, for rectifying said pulsatory voltages developed across said second and third secondary windings, respectively;

second filtering means, for smoothing rectified pulsatory voltages for producing a second energizing voltage;

a switch coupled to said second and third rectifying means and to said second filtering means, for, in a first mode of operation, coupling said second rectifying means to said second filtering means, to the exclusion of said third rectifying means, and for, in a second mode of operation, coupling said third rectifying means to said second filtering means; and

feedback means coupled to said second filtering means and to said feedback input port of said source of varying voltage for, in said first mode of operation, coupling to said feedback input port a first proportion of said second energizing voltage, and for, in said second mode of operation, coupling to said feedback input port a second proportion, different from said first proportion, of said second energizing voltage.

16. A power supply according to claim 15, wherein, in said first mode of operation, the rectified pulsatory voltage applied to said second filtering means has a particular value, and, in said second mode of operation, said rectified pulsatory voltage applied to said second filtering means has a second value, greater than said particular value, and said second proportion is less than said first proportion.

17. A power supply according to claim 15, wherein the difference between said first and second proportions is such as to provide the same magnitude of said first energizing voltage in said first and second modes of operation.

18. A power supply according to claim 15, further comprising:

display scan apparatus coupled to said second filtering means for being energized by said second energizing voltage: and

display scan frequency control means coupled to said display scan apparatus, for controlling the scan to be at a first frequency in said first mode of operation and at a second frequency, greater than said first frequency, in said second mode of operation.

19. A power supply, comprising:

a switch mode power supply including a transformer and first, second, and third secondary windings, for producing first, second and third secondary voltages;

first rectifying and filtering means coupled to receive said first secondary voltage for producing a first energizing voltage;

second and third rectifying means coupled to said second and third secondary windings, respectively, for rectifying said second and third secondary voltages for generating

second and third rectified secondary voltages;

second filtering means for smoothing rectified secondary voltages to produce a second energizing voltage;

controllable switch means coupled to said second and third rectifying means and to
5 said second filtering means, for, in a first mode of operation, coupling said second rectified secondary voltage from said second rectifying means to said second filtering means, to the exclusion of said third rectified secondary voltage, and for, in a second mode of operation, coupling said third rectified secondary voltage to said second filtering means; and

controllable feedback means coupled to said second filtering means and to said switch
10 mode power supply, for coupling a sample of the smoothed voltage produced by said second filtering means to said switch mode power supply for feedback control thereof, said sample being in a first proportion of said smoothed voltage in said first operating mode and in a second proportion, different from said first proportion, in said second operating mode.

20. A power supply according to claim 19, further comprising a display scanner
15 coupled to said second filtering means and equipment ancillary to said display coupled to said first filtering means, for energizing said scanner with different values of voltage in said first and second operating modes, and for energizing said ancillary equipment with the same value of voltage in said first and second operating modes.